

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2018

Subject Code: 2172312

Date: 19/11/2018

Subject Name: Additives and Compounding of Plastics

Time: 10:30 AM TO 01:00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
Q.1	(a) Define additives and list various additives used to modify optical properties and mechanical properties.	03
	(b) What is the function of Impact modifier? Discuss with suitable example.	04
	(c) Discuss mechanism and types of Antioxidants used for plastics.	07
Q.2	(a) Discuss Antistatic agent function and its types.	03
	(b) With neat sketch discuss mechanism and working of Two roll mill.	04
	(c) List various types of plasticizers used in plastics and discuss how addition of plasticizer affects Tg of PVC.	07
	OR	
	(c) Discuss those additives which enhance the properties of waste plastics and facilitate their recycling process.	07
Q.3	(a) How nucleating agent is useful for controlling crystalline structure? Discuss.	03
	(b) List various non intensive type mixers and explain any one with neat diagram.	04
	(c) With neat diagram explain working of twin screw extruder for compounding.	07
	OR	
Q.3	(a) Write about Ribbon blender.	03
	(b) Discuss types of flame retardants used in plastics.	04
	(c) Define: Lubricants. Which are the types of Lubricants? Explain with suitable examples.	07
Q.4	(a) How an Antiblocking additive works? Discuss.	03
	(b) Give difference between single and twin screw extruder.	04
	(c) How coupling agent works? Discuss its mechanism of functions in the composites.	07
	OR	
Q.4	(a) Give function & types of blowing agents along with its applications.	03
	(b) Write a note on: Fillers and reinforcements	04
	(c) With help of neat diagram explain the working of a Banbury mixture used for compounding of plastics.	07
Q.5	(a) State various technological requirements of additives.	03
	(b) Explain High speed mixer with a neat sketch.	04
	(c) Explain UV stabilization mechanism along with its examples.	07

- Q.5**
- (a) Identify various materials selection as additives used in Gears and discuss its function. **03**
 - (b) What do you mean by dispersive and distributive mixing? Discuss. **04**
 - (c) Write a note on: Conductive additives **07**

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